

REMARKS

The Office Action of October 18, 2006, and the references cited therein have been carefully considered.

In this Amendment, the sole amendment is to change the dependency of claim 14 from claim 13, which was cancelled, to independent claim 9 in order to overcome the formal rejection of claim 14. Note that as now amended claim 14 corresponds to claim 14 as previously presented since claim 9 now contains claim 13. Accordingly, since the amendment is only formal in nature and no new issues are being raised, entry of the Amendment is therefore requested

The rejection of claim 14 under 35 U.S.C. 112, second paragraph, as being indefinite for the reason that it depends from a rejected claim has been noted. In view of the above amendment to claim 14, it is submitted that this ground of rejection has been overcome and should be withdrawn.

The rejection of claims 9-12 under 35 U.S.C. 102(b) as being anticipated by the EP published patent application to Dietz has been noted and is respectfully traversed. While, at first blush, there appears to be a similarity between the presently claimed invention and the disclosure of Dietz, a careful comparison of the two confirms that they are quite different.

The present invention as recited in the claims is directed to a device for punching holes in unfired ceramic substrates, so called green sheets. The present invention resulted from the need to solve a specific problem in this field wherein it is necessary to punch ultra thin holes of about 0.1 millimeters in a green sheet having a thickness of about 1.0 millimeters. If the very thin punching portion (26 in the present application) of the punch or die is too long, it would not be stiff enough to perform the necessary punching or stamping. In order to overcome this problem, according to the present invention a three part die is provided, with the die having a thin short punching portion (26) having a diameter essentially corresponding to the diameter of the desired hole, a thicker intermediate portion (25) with a slightly larger diameter and finally a shaft (15) having a still larger diameter that is a multiple of the diameter of the intermediate part (25). The die is mounted above a receiving device (22) with a substantially flat receiving face for the green sheet and an opening (7) for

receiving the punching portion (26) during a punching operation. The die is mounted so that its shaft portion (15) is guided in a bushing (18) while the intermediate portion (25) is guided in a stripper bore or opening (24) of a stripper bushing (21). The length of the stripper opening (24) is greater than that of the punching portion (26) so that the punching portion can be withdrawn into the stripper opening while a portion of the intermediate portion (25) is still in the stripper opening and guided thereby. Thus the short punching portion (26), which is not directly guided by the stripper opening (24), is within the stripper when not in use and only exits the stripper opening (24) during a punching action. Note that the only the punching portion (26) at the end of the die does performs any punching action while the intermediate portion (25) provides only a guiding function for the die near the punching portion (26). Contrary to the Examiner's statements in the Office Action, no such device for punching holes or openings in a green sheet, or any other type sheet, is disclosed in the Dietz reference.

In rejecting the claims, the Examiner has essentially taken the position that the Dietz reference, which is directed to a device for use with metal sheets wherein completely different problems and conditions are involved, discloses a three part die having a shaft 2, an intermediate part 6 and a punching part 14. This is in fact not the case, because the device of Dietz as shown in Figs 1-3 does not punch any holes in the metal sheet (11). Rather the Dietz device of Figs. 1 and 2 simply converts an opening (16) in the metal sheet (11) to a countersunk hole (18 or 19) with a chamfered or conical edge as shown in Fig. 2 of Dietz. Note that in the Dietz device the working part of the die of Dietz is the conical part (13) of the die, while the lower end portion (14) with the rounded nose simply serves as a centering guide for the die during the countersinking operation. The embodiment of Fig. 3 of Dietz operates in essentially the same way except that it converts a round hole (16) in the metal sheet (11) to a countersunk hole with a square cross-section (20) as shown in Fig. 3. The only embodiment of Dietz that actually punches a hole in the metal Sheet (11) is that of Fig. 4, which clearly shows a die (23) with a constant diameter and converts a smaller hole (21) to a larger hole (22) as shown in Fig. 4. Accordingly, for at least the above stated reasons, it is submitted that independent claims 9 and 18, and claims 10-12 and 14-17 dependent on claim 9 and claims 19-

21 dependent on claim 18, are allowable over the Dietz reference under 35 U.S.C. 102(b).

In addition to the above, it is noted that contrary to the statement of the Examiner, the die of Dietz does not have three parts including a shaft 2, an intermediate part (6) and a punching part (14), but rather a die including only the shank 6, the working portion 13, and the centering portion 14. The part 2 identified by the Examiner as the claimed shaft is not part of the die itself, but rather a holder for the die (see English Abstract). Moreover, note that the receiving surface of the receiving device 7 is not substantially flat in the embodiments of Figs. 1-3 of the Dietz reference as required by the independent claims 9 and 18, but rather has a downward slope to each side as clearly shown. Accordingly, for these additional reasons, it is submitted that claims 9-12 and 16-21 are allowable over the Dietz reference under 35 U.S.C. 102(b).

Reconsideration of the rejection of claims 1-3 and 5-8 as being unpatentable over the Dietz reference in view of the U.S. patent to Saito is respectfully requested. In this ground of rejection, the patent to Saito is cited simply to show that it is known to provide a receiving device with a plurality of punched holes. This is readily admitted although the reason for the plurality of punched holes in the receiver is to permit a plurality of holes to be simultaneously punched using a plurality of similar dies and not to accommodate different size punches.

Initially, the inclusion of claim 8 in this ground of rejection appears to be an error since claim 8 depends from claim 9, which is not included in this rejection. Accordingly, claim 8 is allowable for at least the same reasons as discussed above with regard to claim 9. Moreover, claim 1 essentially contains all of the limitations of claim 9 as discussed above, although in different terms. Accordingly, it is submitted that claim 1 and claims 2, 3 and 5-7 dependent thereon are allowable over the Dietz reference for the same reasons as discussed above with regard to claim 9. It is further submitted that it would not be obvious from the Dietz reference to arrive at the hole punching device as defined in claim 1 or the claims dependent thereon.

The patent to Saito was cited, as indicated above, simply to show that it is known to provide a receiving device with a plurality of holes, but does not overcome the deficiencies of the Dietz reference as discussed above. Accordingly, it is further

submitted that claims 1-3 and 5-7 are allowable over the combination of the Dietz and Saito references under 35 U.S.C. 103(a).

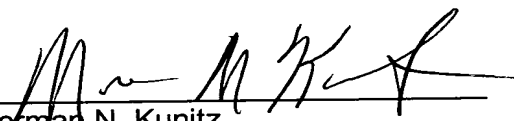
Finally, the rejection of claims 14 and 15 under 35 U.S.C. 102(b) as being anticipated by the Dietz reference is respectfully traversed. These claims are each dependent on claim 9 and thus are submitted to be allowable over the Dietz reference under 35 U.S.C. for at least the same reasons as claim 9 above.

For the above stated reasons, it is submitted that all of the pending claims, i.e., claims 1-3, 5-12 and 14-21, are allowable over the cited prior art and are in condition for allowance. Such action and the passing of this application to issue are respectfully requested.

If the Examiner is of the opinion that the prosecution of the application would be advanced by a further personal interview, the Examiner is invited to telephone undersigned counsel to arrange for such an interview.

Respectfully submitted,

FITCH, EVEN, TABIN & FLANNERY

By: 
Norman N. Kunitz
Registration No. 20,586

FITCH, EVEN, TABIN & FLANNERY
One Lafayette Center
1120 20th Street, NW
Suite 750S
Washington, DC 20036
Telephone: (202) 419-7000
Facsimile: (202) 419 -7007